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**International Preliminary
Examination Report (IPER)
Amended Claims**

Claims (IPER Amendment (A34) on 09. 06. 2006)

1. (amended) A laser ionization mass spectrometer comprising pulsed gas ejecting means, a laser beam irradiation system, repeller and extraction electrodes and mass analyzing means characterized in that said pulsed gas ejecting means is provided with a valve for ejecting carrier gas containing sample molecules into a vacuum chamber in pulse mode, that said laser beam irradiation system irradiates laser beam to said carrier gas ejected into said vacuum chamber for selective photo reaction of said sample molecules in said carrier gas ejected into said vacuum chamber, that said repeller and extraction electrodes are arranged within said vacuum chamber and generate an electric field for extracting sample molecules formed by said photo reaction, that said mass analyzing means analyzes mass of sample molecular ions extracted by said repeller and extraction electrodes, that a valve of said pulsed gas ejecting means is set so that said pulsed gas has pulse length shorter than a distance from an ejecting position to said laser beam irradiation point to said carrier gas and that said laser beam irradiation system is set so as to irradiate laser beam to said carrier gas near a position whereat a leading portion gas of said pulsed gas translating in said vacuum chamber, i.e. a gas ejected before full opening of said valve, is overtaken by a faster flat portion gas, i.e. a gas ejected during full open of said valve.

2.----18. (no change)

19. (amended) A laser beam irradiation positioning method to a carrier gas flow prior to mass analysis on a laser ionization mass spectrometer which includes pulsed gas ejecting means, a laser beam irradiation system, repeller and extraction electrodes and mass analyzing means, said pulsed gas ejecting means having a valve for ejecting in pulse mode said carrier gas containing sample molecules into a vacuum chamber, said laser beam irradiation system irradiating laser beam to said carrier gas containing said sample molecules and ejected into said vacuum chamber for selective photo reaction of said sample molecules in said carrier gas ejected into said vacuum chamber, said electrodes being arranged

within said vacuum chamber and generating an electric field for extraction of said sample molecular ions generated by said photo reaction and said mass analyzing means analyzing mass of said sample molecular ions extracted by said electrodes

characterized in

that an overtaking position whereat a leading portion gas in said pulsed carrier gas ejected from said pulsed gas ejecting means and translating in said vacuum chamber, i.e. a gas ejected prior to full opening of said valve is overtaken by a faster flat portion gas, i.e. a gas ejected during full opening of said valve is obtained and

that said laser beam irradiation point to said carrier gas flow is set near said over-taking position.